

WHAT IS CLAIMED IS:

1. An electrical wiring assembly comprising:  
an electrical box having an open front face and a back face defining a power cable aperture;
- 5 a generally planar wiring panel having a front side and a back side, said front side having a panel fixture extending perpendicularly from said front side and a shielded contact surface within said fixture, said back side having a cable connector, said panel  
AG having a bus<sup>AG</sup> electrically connecting said cable connector to said contact surface, said wiring panel installable within said box so as to create a module compartment in the  
10 interior of said box between said front side and said open front face; and
- an electrical module comprising a front cover and a back cover, said front cover providing a user accessible electrical function, said back cover having a module fixture and a shielded spring contact within said module fixture, said module fixture configured to engage said panel fixture so as to connect said spring contact with said contact  
15 surface;
- said module having an installed position inserted into said electrical box within said module compartment and an uninstalled position removed from said electrical box, said module being removably retained by said panel in said installed position so that power cabling routed through said aperture into said electrical box and connected to said  
20 AG cable connector provides power to said module via said bus<sup>AG</sup>, said contact surface, and said spring contact.
2. The electrical wiring assembly of Claim 1 further comprising a box mount configured to fixedly attach to a wall stud utilizing a stud alignment guide, said electrical box attachable to said box mount and movable between a plurality of latchable  
25 positions relative to said alignment guide so as to accommodate various wall panel thicknesses.
3. The electrical wiring assembly of Claim 1 wherein said wiring panel has a socket providing access to electrical power when power cabling is attached to said cable connector, said electrical wiring assembly further comprising a protective cover

installable over said wiring panel front side and having plug openings so as to allow plug access to said wiring panel socket.

Sub 4. The electrical wiring assembly of Claim 1 further comprising a face plate having a protruding tab, said module having a corresponding catch so that said face plate removably snaps onto said module front cover.

5. The electrical wiring assembly of Claim 1 wherein said module further comprises an extractor handle, said handle having a closed position secured to said electrical box and an open position extending away from said module, said handle in said open position claspingsaid module and providing a grip to extract said module from said electrical box.

Sub 6. The electrical wiring assembly of Claim 1 wherein said module further comprises a module keyed portion of said back cover, said module keyed portion corresponding to a wiring panel keyed portion of said module fixture, said module keyed portion and said wiring panel keyed portion insuring the proper orientation of said module in said installed position.

7. An electrical wiring assembly comprising:  
an electrical box having an open front face and a back face defining a power cable aperture, said electrical box configured to be installed with said front face generally flush with a wall panel exterior surface;  
a wiring panel comprising a generally planar board, said wiring panel fastened within said electrical box so as to partition the interior of said box into a user accessible module compartment proximate said front face and a user inaccessible wiring compartment proximate said back face,  
said wiring panel having a module fixture within said module compartment and a cable connector within said wiring compartment,  
said module fixture providing an electrical connection to said cable connector via a buss portion of said wiring panel,  
said cable connector configured to terminate a power cable routed through said aperture into said wiring compartment; and

5 a user replaceable module providing a user operable electrical function, said module installable within said module compartment by snapping said module into said module fixture and removable from said module compartment by unsnapping said module from said module fixture, said module electrically connected to said cable connector when installed within said module compartment.

8. The electrical wiring assembly of Claim 7 wherein said module fixture has a first contact and said module has a corresponding second contact, one of said first and second contacts having a latch and an associated contact surface and the other one of said first and second contacts having a spring contact, said spring contact being retained by said latch and electrically connecting to said contact surface when said module is snapped into said module fixture.

9. The electrical wiring assembly of Claim 8 wherein portions of said module fixture shield said first contact on all sides so as to minimize user exposure to said first contact when said module is not installed within said module compartment.

10. The electrical wiring assembly of Claim 7 further comprising:  
a socket portion of said wiring panel configured to accept a standard AC plug inserted into said module compartment when said module is not installed; and  
a corresponding plug contact portion of said wiring panel located within said wiring compartment, said plug contact connected said cable connector via said buss and configured to accept and electrically connect to a prong portion of said plug.

11. The electrical wiring assembly of Claim 7 wherein said module has an extractor handle, said handle having a closed position generally flush with said module and an open position extended from said module so as to provide a grip, said module securable to said electrical box with said handle in said closed position and removable from said module compartment with said handle in said open position.

12. A method of wiring an electrical box located within a wall panel to provide electrical service, said electrical box having a back face that receives a power cable and an open front face generally flush with an exterior wall panel surface, said method comprising the steps of:

fastening a generally planar wiring panel within said electrical box so as to partition the interior of said electrical box into a user inaccessible wiring compartment and a user accessible module compartment;

attaching said power cable to a cable connector within said wiring compartment;

5 snapping a module into a panel fixture portion of said wiring panel within said module compartment, said module providing a user operable electrical function; and routing a conductive buss portion of said wiring panel between said cable connector and said panel fixture so as to provide electrical power to said module via said power cable.

10 13. The method of Claim 12 wherein said snapping step comprises the substeps of:

providing a contact surface and an associated latch within said panel fixture;

providing a spring contact within a module fixture portion of said module;

coupling said module fixture and said panel fixture; and

15 pressing said module against said wiring panel until said spring contact engages said latch and connects with said contact surface.

securing with handles

14. The method of Claim 12 further comprising the steps of:

placing an extractor handle in a closed position; and

20 securing said module to said electrical box utilizing a fastener retained by said handle.

15. The method of Claim 13 further comprising the steps of:

placing an extractor handle in an open position;

gripping said extractor handle so as to apply a pulling force on said module

25 directed away from said wiring panel until said spring contact disengages said latch; and removing said module from said module compartment.

Sub 3

16. An electrical wiring assembly comprising:  
an electrical box having an open front face and an internal mounting post located at a recess from said front face;

a wiring panel having a front side and a back side, said wiring panel installed inside said electrical box with said back side abutting said mounting post;

a cable connector located on said wiring panel back side configured to connect to a power cable;

5 <sup>13</sup> a prong connector electrically connected to said cable connector; and

a socket located on said wiring panel front face and housing said prong connector, said cable connector configured to connect to a power cable so that power is transmitted to a plug inserted into said socket via said power cable, said cable connector and said prong connector.

10 <sup>12</sup> 17. The electrical wiring assembly of Claim 16 further comprising a protective cover mounted over said wiring panel front side, said protective cover having a plug opening corresponding to said socket so that a plug inserted into said plug opening also is inserted into said socket.

15 <sup>12</sup> 18. The electrical wiring assembly of Claim 16 further comprising a box mount attachable to a wall stud along an alignment guide, said box mount having a first catch at a first distance from said alignment guide and a second catch at a second distance from said alignment guide, said electrical box mounted to said box mount and slidable between a first latched position corresponding to said first catch and a second latched position corresponding to said second catch.

20 <sup>12</sup> 19. The electrical wiring assembly of Claim 16 wherein said recess is at least about 1.25 inches so as to avoid damage to said wiring panel during wall panel installation.

25 20. A method of wiring an electrical box during the rough framing phase of building construction, said method comprising the steps of:

attaching an electrical box to a wall stud, said electrical box having an open front face and a back face;

30 securing a wiring panel within said box, said panel located a recessed distance from said front face sufficient to avoid interfering with wall panel installation during the subsequent makeup phase of building construction, said wiring panel having a front side facing said front face and a back side facing said back face, said back face having a

cable connector and said front face having a socket configured to accept a standard AC plug, said socket having contacts electrically connected to said cable connector;

routing a power cable through said back face and connecting said power cable to said cable connector; and

5 supplying electrical power to said power cable so that electrical service is available via said socket during the makeup phase.

21. The method of Claim 20 further comprising the step of shielding said wiring panel with a protective cover generally conforming to said front face, said protective cover having a plug opening corresponding to said socket and configured to  
10 allow a standard AC plug to be inserted through said plug opening and into said socket.

22. The method of Claim 20 wherein said attaching step comprises the substeps of:

attaching a box mount to a wall stud so that an alignment guide of said box mount matches a wall stud edge;

15 mounting said electrical box onto said box mount so that said electrical box slides relative to said box mount in a direction generally perpendicular to the wall stud;

locating a plurality of fixed positions for said electrical box along said box mount, each of said positions providing a specific distance between said front face and said alignment guide; and

20 releasably locking said box in one of said positions so as to accommodate the thickness of a wall panel installed on the wall stud.

23. The method of Claim 22 further comprising the step of providing a plurality of position indicators on said box mount, a particular one of said positions associated with a particular one of said indicators, said particular one of said indicators  
25 visibly showing a specific distance from said alignment guide to said box front face for said particular one of said positions.

24. An electrical box assembly comprising:

a box mount attachable to a wall stud in accordance with a stud alignment guide of said box mount;

30 a plurality of catches located along said box mount;

an electrical box having a front face, said box slidably attached to said box mount;

a latch portion of said box configured to releasably engage any of said catches, said box having a plurality of fixed positions corresponding to said catches, each of said positions placing said front face at a specific distance from said alignment guide so that said electrical box can be adjusted for various wall panel thicknesses.

17.  
25. The electrical box assembly of Claim 24 further comprising a plurality of position indicators located on said electrical box associated with said positions, each of said indicators displaying a corresponding distance from said alignment guide to said front face.

18.  
26. The electrical box assembly of Claim 25 wherein said corresponding distance is in the range of 0.5 inches to 1.75 inches.

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27. The electrical box assembly of Claim 24 wherein said alignment guide is the leading edge of said box mount and each of said position indicators aligns with said leading edge to indicate the current distance between said front face and said leading edge.

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28. The electrical box assembly of Claim 24 further comprising a side of said electrical box defining a finger aperture, said aperture providing a grip to move said electrical box between said positions.

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29. The electrical box assembly of Claim 24 wherein said latch portion has a latch release portion configured to accept a tool to pry said latch from a particular one of said catches.

30. A method of installing an electrical box having an open front face, said method comprising the steps of:

25 attaching a box mount to a wall stud so that an alignment guide of said box mount matches a wall stud edge;

mounting said electrical box onto said box mount so that said electrical box slides relative to said box mount in a direction generally perpendicular to the wall stud;

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locating a plurality of fixed positions for said electrical box along said box mount, each of said positions providing a specific distance between said front face and said alignment guide; and

latching said box in one of said positions so as to accommodate the thickness of a wall panel installed on the wall stud.

31. The method of Claim 30 wherein said latching step comprises the substeps of:

measuring a specific distance from the exterior surface of said wall panel and the proximate edge of said wall stud;

releasing a latch portion of said box;

sliding said box to a position relative to said box mount where a position indicator corresponding to said specific distance is displayed; and

engaging said latch in a corresponding catch slot of said box mount so as to lock said box in a fixed position associated with said position indicator.

32. An electrical wiring assembly comprising:

an electrical box means for mounting in a wall;

a wiring panel means for attaching power cables, said wiring panel means installed within said electrical box means;

a module means for providing an electrical function installable within said electrical box means; and

a snap-in means for removably attaching and electrically connecting said module means to said wiring panel means.

33. The electrical wiring assembly of Claim 32 further comprising a box mount means for attaching said electrical box to a wall stud.

34. The electrical wiring assembly of Claim 32 further comprising a protective cover means for shielding said wiring panel during the makeup phase of building construction.

35. The electrical wiring assembly of Claim 32 further comprising a face plate means for trimming said module when installed within said electrical box.